Common Natural Molecular Species

- Paraffins
- Fatty Acids
- Glycerol esters
- Phospholipids

Main bodies of end-products:
- Used as
- Matrices dissolving main compound

Food Industry
- Pharmaceuticals
- Cosmetics

Multi-component nature of lipids
- Triacylglycerides (TAGs) are the most abundant compounds in edible natural fats and oils.
- Their physical and chemical properties are determined by the type and combination of fatty acids (FA) in the lateral chains.

Phase behaviour of TAGs mixtures
- The physical properties of fats are dominated by the type of TAGs and relative composition present in the melt.
- The phase behaviour depends on the relative chemical affinities of TAGs in the mixture, as well as on their melting points.

XRD Peak Pattern (nm)
- 0.41
- 0.37–0.39 (weak)

Thermal Stability (Monotropic Polymorphism)

Polymorphism
- TAGs can pack in different crystalline arrangements, called polymorphs.
- Most common polymorphs are α, β', β.
- Complex mixtures of TAGs give rise to additional polymorphs.

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<th>Subcell packing:</th>
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<tr>
<td>Subcell Structure</td>
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<td>XRD Peak Pattern (nm)</td>
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References